

MicroCalib 1.0, November 2020. (Freeware)

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Short Description:

The goal of MicroCalib is to be able to use an "ordinary" microphone to perform measurements with SpeakerSweep while still obtaining good results.

SpeakerSweep version 2.0 offers the possibility of improving accuracy by using a "calibration curve" ... but to take advantage of this functionality you need the "calibration file" of the microphone being used.

There is a pending AES standard for frequency response data files. The file must be a simple text file with the extension ".txt" or ".frd" (Frequency Response Data).

Each line has a frequency value followed by a dB value, separated by a tab, comma, or spaces.

The lines should be in ascending order of frequency. There can be any number of measurement lines.

Only a few measurement microphones are sold with their individual calibration file.

(E.g.: B&K, Sonarworks, Dayton, miniDSP, ...)

Usually, microphone manufacturers only provide frequency response graphs. Those graphs are not individual, they are generic to a model.

However, with a good microphone, the inaccuracies in the generic frequency response curve are much less noticeable than those of the loudspeaker box itself !

With MicroCalib you can convert a bitmap graphic to a calibration text file.

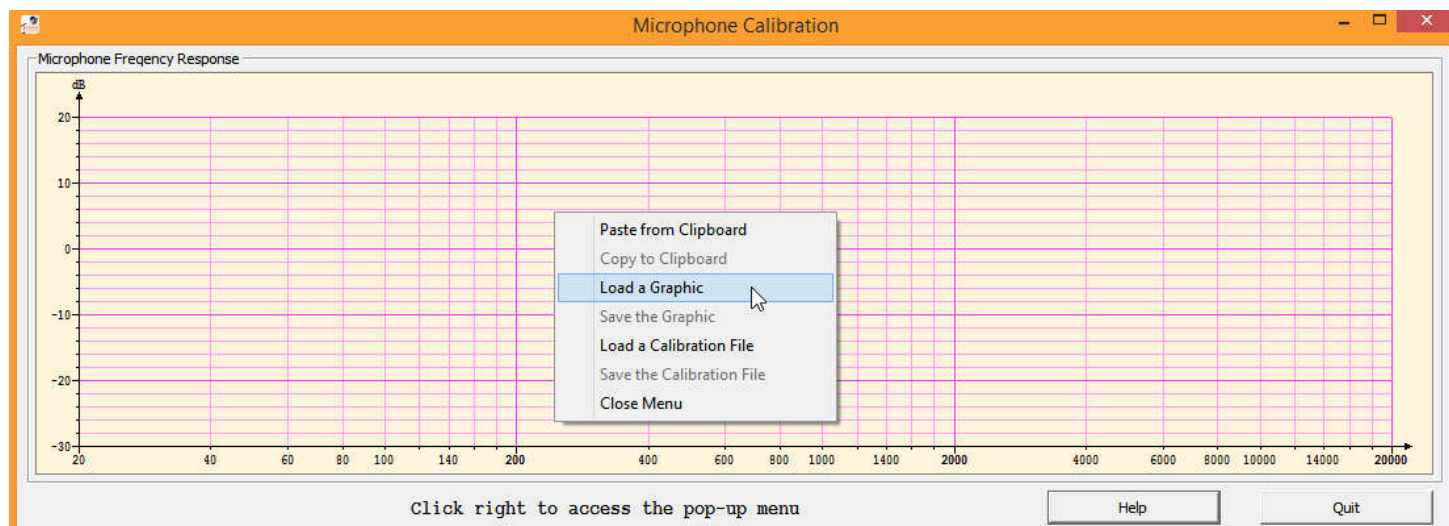
Instructions for use:

With the exception of the "Help" and "Exit" buttons, there is no button in the MicroCalib dialog window. The commands are located in a context menu accessible by a right click.

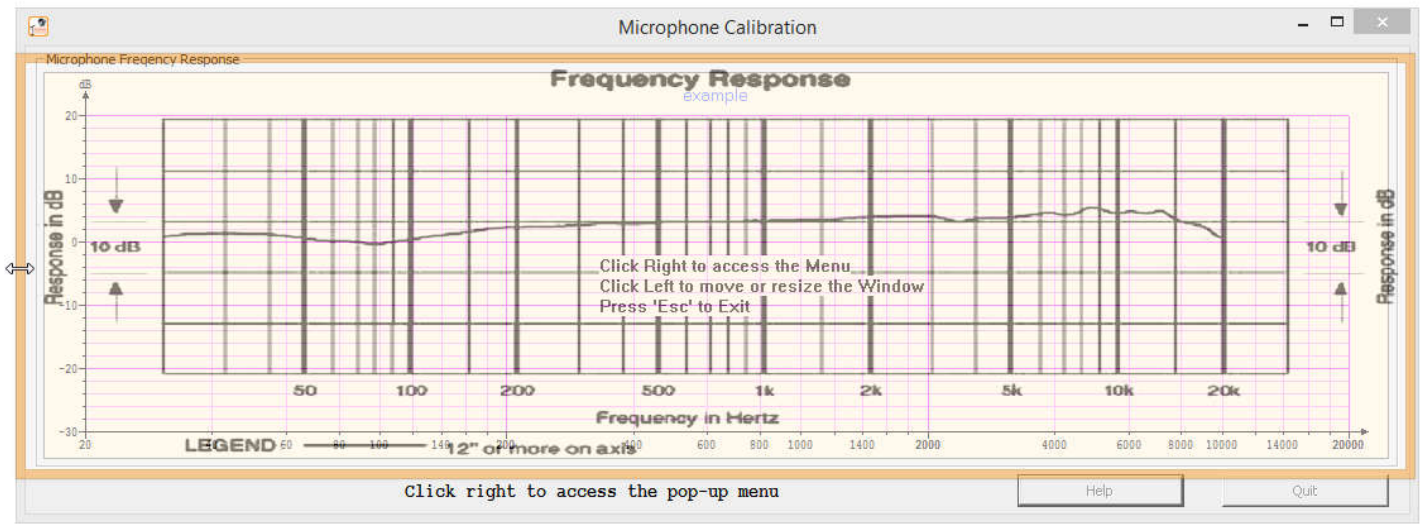
The first thing to do is import your microphone's frequency graph.

There are three possible ways:

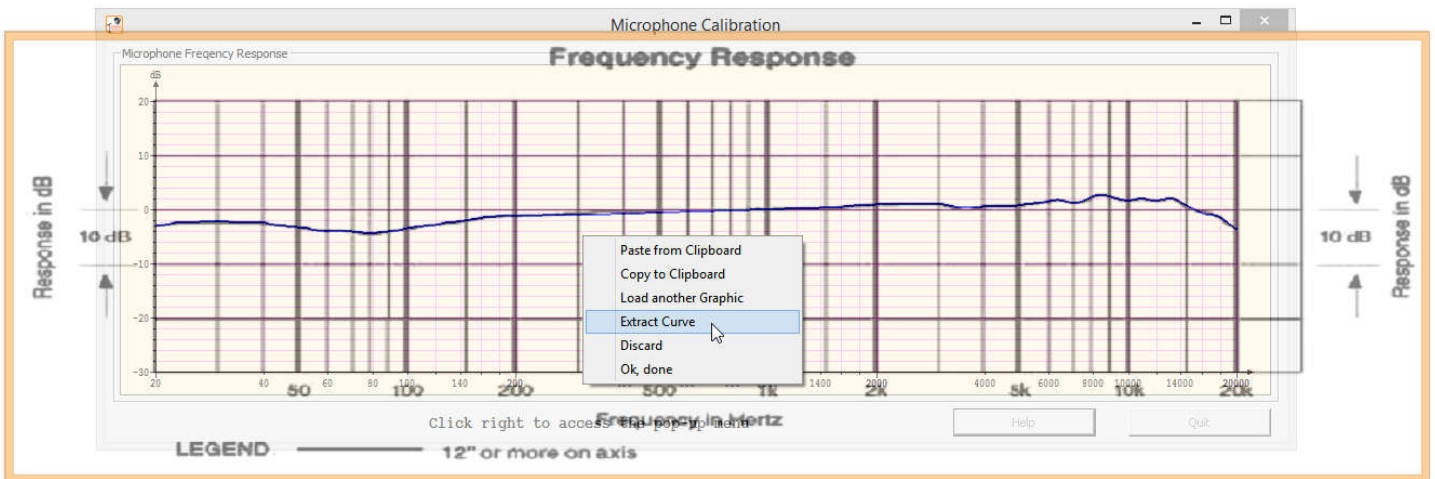
- Load a graphic file, in ".png", ".bmp" or ".jpg" format.
- Paste the contents of the clip-board containing the graph.
- Drag and drop the file onto window or the MicroCalib icon.



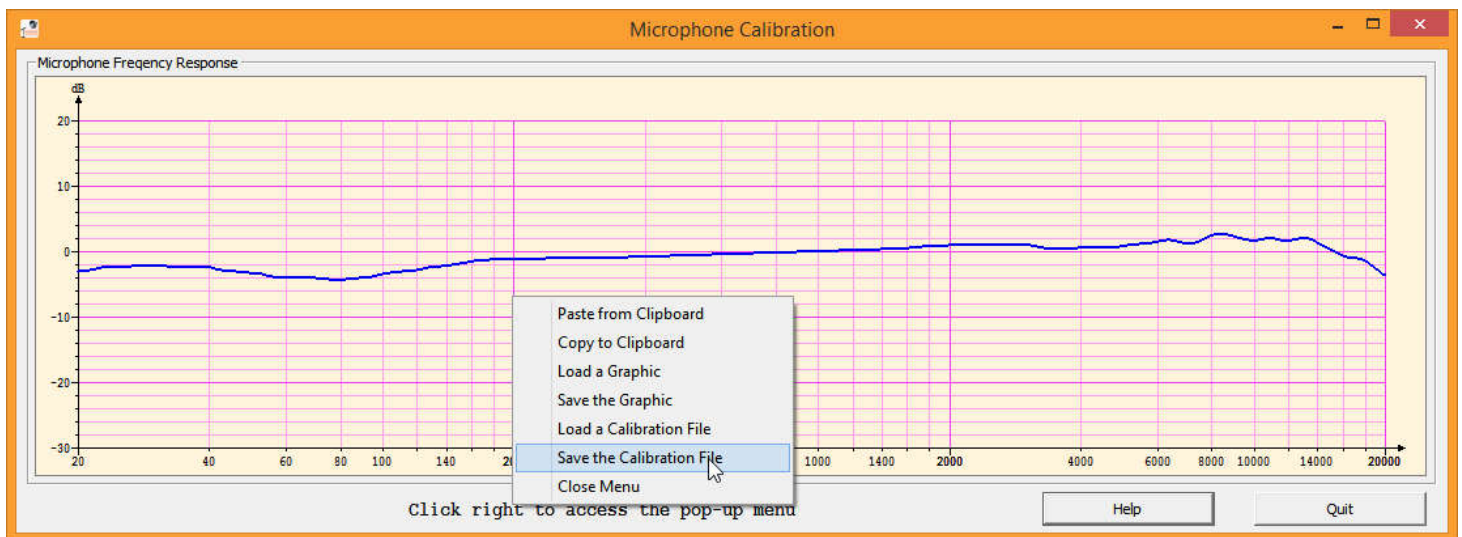
Your graph will be displayed in a semi-transparent window hovering over the MicroCalib dialog box.



By clicking on the transparent borders of the window, adjust its size and position so that the X and Y scales of the original graph perfectly match the MicroCalib coordinate space. Then select "Extract Curve" from the context menu.



The extracted curve is printed in blue. You can see it through the transparent window. When you select "Ok, done", the transparent window closes and the curve remains in the main window.



You can save it in a "Calibration File", in text mode. You can also save the graphic inside a ".png" file.

Hints:

In practice, things are not always so simple!

If the quality of the original graph is poor, MicroCalib will fail to find the curve.

The original graph must be "cleaned up". The easiest way to do this, is to open Photoshop(c) or another image processing tool, without leaving MicroCalib.

Using the clip-board you can easily export the graph to this external tool to enhance the image:

- modify the brightness, enhance the contrast, cancel deformation and rotation...
- erase the "nuisances", i.e.: text above the graphic, grid lines close to the curve...
- when the quality of the original graphic is really too bad, the best way to use it is to trace the curve on a Photoshop layer, by transparency. It can be done in under a minute.

After having cleaned the image, you copy it to the clipboard and you paste it on Microcalib again.

If MicroCalib fails again to find the curve, you have to complete the improvement cycle again!